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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/776,319

02/12/2004

Jae-Young Jung

46295

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7590

12/19/2005

ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P.

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EXAMINER

MULL, FRED H

ART UNIT

PAPER NUMBER

3662

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/776,319	Applicant(s) JUNG ET AL.	
	Examiner Fred H. Mull	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Observations

1. For simplicity, all citations to the specification will refer to the paragraph number used in the application's Patent Application Publication, US 2004/0160360 A1.
2. The examiner considers ¶¶96 and ¶106, taken together, as providing the definition of "pseudo velocity".

Specification

3. The disclosure is objected to because of the following informalities:

The wording of ¶17 is a little awkward. The examiner would like to suggest changing the first two sentences to:

"The satellite acquisition information transferred to the MS 100 is calculated ~~using estimation information of an~~ based on the MS 100's estimated GPS signal search ~~time time-of-application~~ (Ta) for determining a position of the MS 100, instead of using satellite orbital information transferred from the reference station GPS receiver 130 to the PDE 120 at a ~~specific time time-of current~~ time (Tc). Particularly, there is little ~~difference~~ variation in code phase and Doppler shift information contained in the satellite acquisition information due to the movement of satellites with the lapse of time."

Note that the second sentence was changed because its original wording seems to contradict the third sentence. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuchs, previously cited.

In regard to claim 1, 5, 9, and 13, Fuchs discloses:

a satellite data collector (112, Fig. 1) for collecting satellite orbital information and pseudo range between a satellite and at least one of a mobile station (MS) and a base station (BS) (130) of more than three consecutive times from a plurality of satellites (col. 7, lines 20-28);

a satellite velocity calculator for calculating velocity of satellites relative to the Earth-Centered, Earth-Fixed (ECEF) coordinate system using the satellite orbital information; a pseudo velocity calculator for calculating pseudo velocities between the MS and each satellite observed by the MS at a position measurement time of the MS using the velocity of satellites (col. 3, line 66 to col. 4, line 47); and

a satellite acquisition information calculator for calculating a code phase using the pseudo range, calculating a Doppler shift using the pseudo velocity (col. 9, line 58 to col. 10, line 5), where the model's estimation of frequency is inherently taking the Doppler shift into account. If the model neglected Doppler shift, the frequency would just be the broadcast frequency of the satellites and no estimation would be necessary.

The expected uncertainty in frequency takes into account user frequency reference errors.

In regard to claims 2 and 10, Fuchs further discloses the pseudo range is estimated considering a propagation delay between each satellite observed by the MS and the MS (col. 3, line 66 to col. 4, line 47; col. 7, lines 10-19).

In regard to claims 3 and 11, Fuchs further discloses the pseudo velocity is estimated considering a propagation delay between each satellite observed by the MS and the MS (col. 3, line 66 to col. 4, line 47).

In regard to claims 4 and 12, GPS signal information comprises satellite coordinates and a coordinate extraction time.

In regard to claims 6-8 and 14-16, the satellite acquisition information calculator calculates the Doppler shift containing both a frequency variation of the satellite signal at the time T_a at which the MS expects to search for the satellite signal and a differential value of the frequency variation (col. 7, lines 20-28), where the pseudorange model that the Doppler is taken from contains a representation of the model at a given time as well as the differential change of the model in time.

Conclusion

5. The claims previously indicated as allowable are now rejected under a new grounds of rejection. Hence, this action is made Non-Final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull
Examiner
Art Unit 3662

fhm



THOMAS H. TARCZA
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